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PERMANENT PASTURES FOR THE COTTON BELT.

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INTRODUCTION.

Permanent pastures are a necessity in the cotton States. Even with the present acreage devoted to cotton and other tilled crops, there is plenty of idle land that if turned into pastures would yield a good additional income without increasing the farmer's labor bills to any appreciable extent. In changing from cotton growing to live-stock raising, as many are now doing, the need of permanent pastures becomes imperative.

LANDS SUITABLE FOR PASTURES.

The more fertile the land the better the pasture; but for economic reasons the rough fields and gullied hillsides should be the first to be used for grass. The increasing prices of meats and of farm labor will often make the fertile fields more profitable in pasture than in tilled crops. The convenience of water for the stock should not be overlooked in choosing a field for a pasture.

PREPARATION OF THE LAND.

The success of a permanent pasture depends primarily on the fertility of the land at the start. On good soil with the proper system of grazing, a pasture will increase in production for many years. It is a slow process, however, to build up poor soils by pasturing alone. It is better to put the land in good tilth at the start in order to maintain the stand of the more nutritious grasses and clovers.

If the soil is deficient in organic matter, some green-manure crop, such as cowpeas or rye, should be plowed under before seeding the grass. Stable manure would accomplish the same purpose, but this is not often available. Experience has shown that phosphorus is the one element that is most likely to be profitable in pastures; so, if commercial fertilizers are used, those carrying a high percentage of this element are most desirable. Acid phosphate and basic slag are the most economical and satisfactory materials to use.

KINDS OF GRASSES FOR PASTURES.

The Southern States are fortunate in having a number of first-class pasture plants suitable for their conditions. With a proper selection of these plants it is possible to have good pastures throughout the entire year.

In seeding, it is best to use a mixture of several grasses and clovers, as no one kind will meet all requirements. Of the many pasture plants available, the

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Note.—Intended for farmers in the cotton belt who desire to diversify their farming because of the economic crisis which adversely affects the cotton crop at this time.

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best ones under general conditions are Bermuda grass, lespedeza, bur clover, and white clover. Redtop, orchard grass, carpet grass, Italian rye-grass, and the vetches should be added to this list for the special conditions mentioned later.

BERMUDA GRASS.

Bermuda grass is unquestionably the best summer pasture grass known in the South. It occupies the same relative position in that section that blue-grass does in the North. It should be made the basis for pasture mixtures on all soils except the very light sands. Bermuda grass does best on rich loams along creeks, sometimes growing large enough to make 4 tons of hay to the acre. The yield is not so high on uplands, but it is sufficient to justify its use for grazing purposes on all the loams and the heavier types of soils. It is permanent in its existence on fertile soils, endures long periods of drought without much injury, is benefited rather than injured by the grazing and trampling of stock, and furnishes as nutritious a feed as most other grasses. No other plant has been found that is more suitable for gullied hillsides, to prevent washing and to cover up the scars of erosion.

It flourishes in sunshine, but will not endure much shade. For this reason it should not be used in woodland pasture. Its dislike of shade has suggested a successful method for its eradication from tilled fields. A crop of oats and vetch seeded in the fall, followed by a crop of cowpeas the following summer, will usually exterminate the grass if the field is desired for a cultivated crop.

HOW TO SET BERMUDA GRASS.

Lands may be set with Bermuda grass either by seed or by planting small pieces of sod. Formerly the seed of this grass was so scarce and so low in vitality that the sod-transfer method was the one most commonly practiced. In recent years it has been found that Bermuda grass seeds freely in some of the Southwestern States, especially in Arizona. This western-grown seed is of a much better quality than that formerly on the market, and with it seeding is practicable.

The seed is best sown on a well-prepared seed bed in March or April. Five pounds of seed to the acre is sufficient, as the seed is very small, and, besides, the grass spreads rapidly over the ground by means of its aggressive root-stocks. In order to facilitate the equal distribution of such a small quantity of fine seed, it may be mixed with cottonseed meal or dry earth to increase the bulk or, better, mixed with some other seeds of pasture plants, as directed later. The seed may be covered with a roller or light smoothing harrow.

It is usually an easy matter in the South to find in any locality a well-established Bermuda-grass sod, and when desirable this can be used for propagating the grass instead of using the seed. The field should be prepared the same as for sowing the seed, but many good stands have been obtained with very little preparation of the seed bed. A common method of planting is to lay off furrows about 3 feet apart and drop small pieces of sod every 2 or 3 feet in the furrow and cover with the foot. The sod for planting may be obtained by cutting a shallow furrow with a turning plow and then chopping this up with a sharp spade into pieces about 2 inches square. The planting of sod may be done at any time during the summer, but preferably during periods of wet weather. If the planting is done in the spring, the grass will usually spread and cover the entire ground the first season.

LESPEDEZA, OR JAPAN CLOVER.

Lespedeza is one of the few annual plants that are suitable for pastures. It seeds near the ground and unless extremely close grazing is practiced is self-perpetuating. It often grows on land so low in fertility that nothing else will survive, but it succeeds best on rich, fertile loams in the lower Mississippi Valley, where it sometimes grows to a height of 2 feet or more and makes a very satisfactory crop of hay. Lespedeza belongs to the legume family of plants and enriches the soil with nitrogen. For this reason alone it is always desirable to mix this with Bermuda grass for pastures. It is slow in starting growth in the spring, but makes its best growth in midsummer and is not checked until heavy frosts come in the fall.

Lespedeza may be seeded at any time after danger from frosts is past in early spring. Twenty-five pounds of pure, well-cleaned seed to the acre is considered a full seeding. Smaller quantities than this will often be sufficient for a pasture, as it spreads rapidly when once started in a suitable soil. It is a splendid plant to grow with Bermuda grass, and should always be included with it for a permanent pasture.

Another method of getting a stand of lespedeza is to cut some of the ripened hay and scatter it over the ground to be seeded. This is often practiced where the land is too rough to be broken with a plow.

BUR CLOVER AND WHITE CLOVER.

It is always desirable to seed with Bermuda grass and lespedeza something that will furnish winter grazing. The two plants best suited for that purpose are bur clover and white or Dutch clover. These take possession of the land during the winter and furnish excellent grazing until hot weather comes, when they give way to the Bermuda grass. Bur clover is an annual, but reseeds itself readily. White clover is perennial and propagates itself both by seed and by creeping rootstocks.

Bur clover should be seeded in late summer or fall at the rate of 15 pounds of hulled seed or 2 bushels of the burs to the acre. White clover is best seeded at the same time, using 4 or 5 pounds to the acre.

SPECIAL-PURPOSE GRASSES.

While the Bermuda-grass, lespedeza, bur-clover, and white-clover mixture is undoubtedly the best combination that can be sown for pastures over the greater part of the cotton-growing region, there are a few other grasses that will be better to plant under certain conditions.

CARPET GRASS.

On the sandy soils along the Gulf coast, carpet grass has demonstrated its ability not only to hold its own but to crowd out most other grasses, including Bermuda grass. It has a creeping habit of growth, taking root at every joint, which makes it a pasture grass. Close grazing by stock is essential to maintain a good sod. If stock be kept off it for an entire season it will greatly deteriorate. It seldom makes sufficient growth to justify its being mown for hay, and unless grown with other grasses is not satisfactory for pasture purposes.

Carpet grass may be planted by the same methods used for propagating Bermuda grass. It is doubtful whether it is ever advisable to plant this grass, as it comes in itself throughout the entire region to which it is adapted. If the land is seeded to the Bermuda-lespedeza mixture already mentioned, it will furnish more grazing for two or three years than if seeded to carpet grass. By that time the carpet grass will have established itself. The problem then is to add something to the carpet grass to increase its grazing capacity. This can be done by occasionally harrowing the sod in the fall and sowing Italian rye-grass seed. Bermuda-grass seed might be added in the same manner in the spring, or pieces of Bermuda sod might be dropped in shallow furrows in the carpet-grass sod. The Bermuda grass will increase the summer pasturing, while the Italian rye-grass will make a greater growth during the cooler weather.

ITALIAN RYE-GRASS.

Italian rye-grass is the best temporary winter pasture grass for the South. Its chief merit lies in its ability to produce a luxuriant growth of nutritious grass quickly after seeding. Usually it does not last more than two or three years, and for practical purposes it must be considered an annual. In pastures it serves the purpose of furnishing abundant grazing during the winter months and while the other grasses are becoming established. It grows well where Bermuda grass flourishes, and is recommended to be used wherever Bermuda-grass planting is done, whether by the seed or sod method. The seed of Italian rye-grass is of strong germination, and 30 pounds to the acre is sufficient for a full stand, while 15 pounds is probably sufficient for sowing in mixtures or to replenish a thin sod on an old pasture. Seeding is best done in the fall.

REDTOP.

Redtop is a widely known pasture and hay grass. It is not a heavy-producing grass; neither is the hay of especially good quality. When kept closely grazed, stock eat it readily. Its ability to grow on soils that are wet or poor in lime makes it worthy of consideration. It grows freely in combination with other grasses and adds to the bulk of herbage produced without crowding out the plants with which it is associated. It seeds freely and spreads by rootstocks, making a fine even turf if seeded alone. Its greatest use in the South is on creek bottoms that are too wet to produce Bermuda grass. It adds materially to the amount of pasturage except in midsummer, when it languishes.

It is best propagated from seed, using 6 to 8 pounds to the acre. Seeding is best done in the fall. The directions given for seeding Bermuda grass apply equally well to seeding redtop.

ORCHARD GRASS.

Orchard grass is a coarse-growing, bunchy grass that furnishes good grazing in early spring and late fall. Its growth is checked during hot weather. It will endure considerable rough treatment without injury and should be kept closely grazed for the best results. No other grass will stand more shade, and it is the one most often recommended for woodland pastures. It never does well on light sandy soils. On wet lands and heavy clays it is an excellent grass to mix with redtop. From 20 to 30 pounds of seed to the acre will give a full stand. Half as much will be sufficient for pasture mixtures. It should be seeded in the fall. It is one of the best grasses to sow in gullies, to prevent further erosion.

HAIRY VETCH.

The persistent character of hairy vetch in the soils of many of the Southern States makes it worthy of consideration as a pasture plant. When seeded early in the fall with oats it will furnish good grazing during the winter and early spring and afterwards produce a good crop of hay. The few cases in which it has been tried in permanent pastures have been sufficiently successful to encourage further trials.

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